

05-1



# ecology and environment, inc.

CLOVERLEAF BUILDING 3, 6405 METCALF, OVERLAND PARK, KANSAS 66202, TEL. 913/432-9961

International Specialists in the Environment

## MEMORANDUM

Laclede Coal  
MCD 981715980  
1-8

TO: Pete Culver, RPO

THRU: Sharon Martin, Acting FITOM

FROM: E & E/FIT

DATE: January 30, 1991

SUBJECT: HRS Considerations for the Laclede Coal Gas Plant Site,  
St. Louis, Missouri.  
TDD #F-07-9008-020 PAN #FM00579SA  
Site #Y33 Project #002  
Superfund Contact: Greg Reesor  
Project Manager: Keith A. Brown

1.30.91

## INTRODUCTION AND BACKGROUND

The Region VII U.S. Environmental Protection Agency (EPA) tasked the Ecology and Environment, Inc., Field Investigation Team (E & E/FIT) to conduct a Screening Site Inspection (SSI) of the former Laclede Coal Gas Plant site in St. Louis, Missouri. The purpose of the SSI is to determine whether waste remains on site, posing potential hazards to human health or the surrounding environment.

The site is a former manufactured gas plant. Tar sludges (coal tars) and spent oxides are the two waste streams of primary concern. Coal tar wastes are primarily polynuclear aromatic hydrocarbons (PAHs) and phenols that were produced during coal or coke combustion. Spent iron oxide wastes were produced during the gas purification process where impurities were removed from the manufactured gas. Iron oxide wastes contain sulfur compounds, cyanide compounds, and small quantities of coal tar.

The site was first investigated by E & E/FIT on September 17, 1987. A site reconnaissance was conducted at the Mound Street Power Plant to aid in preparing a Preliminary Assessment (PA) report; the plant is located on the former Laclede Coal Gas property. The Mound Street Plant is now owned by McKinley Iron and it is in the process of being razed. The PA was prompted by reports of oil accumulation in the facility and the occasional release of oil into the adjacent Mississippi River. Six liquid samples were collected from the basement of the facility, where hydraulic oil from electrical transformers allegedly was stored. Two samples from two different manholes adjacent to the facility were also sampled. All samples were screened for PCBs at a 1 ppm detection limit. No PCB contaminants were identified by the Tracor gas chromatograph.

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The E & E/FIT conducted a second site reconnaissance on November 20, 1990, to facilitate preparation of the work plan for the SSI. The FIT observed seepage from the foundation and piping system of an abandoned pump house that was formerly owned by the Mound Street Power Plant. The pipes, which originate from the plant, had been plugged with concrete, but seepage was still leaching through the concrete. Because this pump house is located on the east side of the flood control levee, this leachate was observed to be seeping directly into the Mississippi River.

#### **HRS CONSIDERATIONS**

A preliminary Hazardous Ranking System (HRS) score of 50 was calculated for the Laclede Coal Gas site. The ground water pathway was assigned a score of 1, based on a suspected release to ground water. This low score reflects the fact that ground water is not used for drinking water within the 4-mile target distance limit. An observed release to ground water is likely if wastes are found to be buried on site, because the ground water table is relatively shallow. The preliminary ground water score is based on the minimum value for waste quantity (18). It is FIT's professional judgment that waste quantity is particularly large at this site, since it is one of the largest coal gas plant sites investigated by Region VII. However, if waste quantity at the Laclede Coal Gas Plant site receives the maximum HRS value of 100, the overall pathway score would only increase to 3, because of the low number of targets.

The surface water pathway is the primary pathway of concern and is given the maximum value of 100. Leaching of waste into the Mississippi River was observed during an SSI reconnaissance; therefore, a suspected release was evaluated for the preliminary surface water pathway score. It should be noted that the constituents of the waste are still unknown. The Illinois community of Metro East receives water from a surface water intake located east across the river approximately 1/4 mile from the site. Sports fishing on the Mississippi River has also been documented relatively close to the site. Drinking water and food chain targets are evaluated along the 15-mile target distance limit and are considered primary targets under HRS evaluation. Waste quantity is given an HRS value of 32, since primary targets were evaluated for the surface water pathway and this value is greater than the determined waste quantity value. Further investigative work is needed to confirm migration to the nearby surface water body. The nearest sensitive environment is about 10 miles downstream.

The probability of documenting an air release for the Laclede Coal Gas site is low. The pathway was evaluated according to the no suspected release criteria, generating a pathway score of 9. No primary targets exist for the pathway. The nearest individual is about 1/4 mile from the site and no sensitive environments exist within 1/2 mile from the boundaries of the site.

The soil exposure pathway score is 3. FIT determined that no targets live on or within 200 feet of suspected contamination. A total of 11 workers were evaluated for potentially threatened targets.

An SSI is recommended for the Laclede Coal Gas site to determine if the sludges (coal tars) and spent oxides are buried on site and pose an environmental hazard.

After the SSI is completed and the preliminary HRS evaluations are verified, an updated score will be calculated. This site has a medium potential to score for the NPL.

Attachments: HRS PA Scoresheets and Reference List

# DRAFT

NOV 06 1990

Site Name: *La Cade Pro Gas*

Date: *1-14-91*

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## GROUND WATER PATHWAY SCORESHEET

Pathway Characteristics	
Do you suspect a release (see Ground Water Pathway Criteria List, page 7)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is the site located in karst terrain?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Depth to aquifer:	<i>Shallow</i> ft
Distance to the nearest drinking-water well:	<i>600 NOT USED FOR DRINKING WATER</i> ft

### LIKELIHOOD OF RELEASE

	A Suspected Release (550)	B No Suspected Release (500 or 340)	References
1. SUSPECTED RELEASE: If you suspect a release to ground water (see page 7), assign a score of 550, and use only column A for this pathway.	550		(1)(2)(2)
2. NO SUSPECTED RELEASE: If you do not suspect a release to ground water, and the site is in karst terrain or the depth to aquifer is 70 feet or less, assign a score of 500; otherwise, assign a score of 340. Use only column B for this pathway.			
* Observed release likely if waste present, buried on site. LR =	550		

### TARGETS

3. PRIMARY TARGET POPULATION: Determine the number of people served by drinking water from wells that you suspect have been exposed to hazardous substances from the site (see Ground Water Pathway Criteria List, page 7). _____ people x 10 =	—		(2)(3)
4. SECONDARY TARGET POPULATION: Determine the number of people served by drinking water from wells that you do NOT suspect have been exposed to hazardous substances from the site, and assign the total population score from PA Table 2. Are any wells part of a blended system? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, attach a page to show apportionment calculations.	—		(2)(3)
5. NEAREST WELL: If you have identified any Primary Targets for ground water, assign a score of 50; otherwise, assign the highest Nearest Well score from PA Table 2. If no drinking-water wells exist within 4 miles, assign a score of zero.	—		(2)(3)
6. WELLHEAD PROTECTION AREA (WHPA): Assign a score of 20 if any portion of a designated WHPA is within 1/4 mile of the site; assign 5 if from 1/4 to 4 miles.	—		—
7. RESOURCES: A score of 5 is assigned.	5	5	
T =	5		

### WASTE CHARACTERISTICS

8. A. If you have identified any Primary Targets for ground water, assign the waste characteristics score calculated on page 4, or a score of 32, whichever is GREATER; do not evaluate part B of this factor.	(100 or 32)	
B. If you have NOT identified any Primary Targets for ground water, assign the waste characteristics score calculated on page 4.	(100, 32, or 18)	(100, 32, or 18)
WC =	18	

GROUND WATER PATHWAY SCORE:

LR x T x WC  
82,500

(subject to a maximum of 100)

1

# DRAFT

NOV 06 1990

Site Name: Lackliss Coal Gas 12  
Date: 1-14-91

## SURFACE WATER PATHWAY LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT SCORESHEET

Pathway Characteristics	
Do you suspect a release (see Surface Water Pathway Criteria List, page 11)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Distance to surface water:	<u>100</u> ft
Flood Frequency:	<u>500</u> yrs
What is the downstream distance to the nearest drinking-water intake?	<u>&lt; 1/4</u> miles
nearest fishery? <u>1</u> miles	nearest sensitive environment? <u>10</u> miles

### LIKELIHOOD OF RELEASE

- SUSPECTED RELEASE:** If you suspect a release to surface water (see page 11), assign a score of 550, and use only column A for this pathway.
- NO SUSPECTED RELEASE:** If you do not suspect a release to surface water, and the distance to surface water is 2,500 feet or less, assign a score of 500; otherwise, assign a score from the table below. Use only column B for this pathway.

Floodplain	Score
Site in annual or 10-yr floodplain	500
Site in 100-yr floodplain	400
Site in 500-yr floodplain	300
Site outside 500-yr floodplain	100

A Suspected Release	B No Suspected Release
(550) 550	(500, 400, 300 or 100)
(550) 550	(500, 400, 300 or 100)

### References

(1)(2)(3a)

\* Deposition of potential waste into surface water has been observed LR =

### DRINKING WATER THREAT TARGETS

- Determine the water body types, flows (if applicable), and number of people served by all drinking-water intakes within the 15-mile target distance limit. If there are no drinking-water intakes within the target distance limit, assign a total Targets score of 5 at the bottom of this page (Resources only) and proceed to page 14.

Intake Name	Water Body Type	Flow	People Served
<u>Ill. American Water Comm.</u>	<u>River</u>	<u>147,000</u> cfs	<u>300,000</u>
		cfs	
		cfs	

- PRIMARY TARGET POPULATION:** If you suspect any drinking-water intake listed above has been exposed to hazardous substances from the site (see Surface Water Pathway Criteria List, page 11), list the intake name(s) and calculate the factor score based on the number of people served.

Ill. American Water Comm.  
Illinois Metro East Community  $\approx 300,000$  people  $\times 10 =$

- SECONDARY TARGET POPULATION:** Determine the Secondary Target Population score from PA Table 3 based on the populations using drinking-water from intakes that you do NOT suspect have been exposed to hazardous substances from the site.

Are any intakes part of a blended system? Yes ☐ No ☐  
If yes, attach a page to show apportionment calculations.

- NEAREST INTAKE:** If you have identified any Primary Targets for the drinking water threat (Factor 4), assign a score of 50; otherwise, assign the Nearest Intake score from PA Table 3. If no drinking-water intake exists within the 15-mile target distance limit, assign a score of zero.

- RESOURCES:** A score of 5 is assigned.

3009000	
—	
(50, 20, 10, 2, 1, or 0)	(20, 10, 2, 1, or 0)
50	
(5)	(5)
5	5
T = 3,000,055	

(3)(4)

(3)(4)

(3)(4)

# DRAFT

NOV 06 1990

Site Name:

Date:

Lactide Coal Gas 14  
1-14-91

## SURFACE WATER PATHWAY (continued) HUMAN FOOD CHAIN THREAT SCORESHEET

LIKELIHOOD OF RELEASE		LR =	A	B	References
			Suspected Release	No Suspected Release	
			(550)	(500,400,300 or 100)	
Enter the Surface Water Likelihood of Release score from page 12.			550		

### HUMAN FOOD CHAIN THREAT TARGETS

8. Determine the water body types and flows (if applicable) for all fisheries within the 15-mile target distance limit. If there are no fisheries within the target distance limit, assign a Targets score of 0 at the bottom of this page and proceed to page 15.

Fishery Name	Water Body Type	Flow
Mississippi River	river	147,000 cfs
		cfs
		cfs
		cfs
		cfs

9. PRIMARY FISHERIES: If you suspect any fishery listed above has been exposed to hazardous substances from the site (see Surface Water Criteria List, page 11), assign a score of 300 and do not evaluate Factor 10. List the Primary Fisheries:

Fishery (Rational)

10. SECONDARY FISHERIES: If you have not identified any Primary Fisheries, assign a Secondary Fisheries score from the table below using the LOWEST flow at any fishery within the 15-mile target distance limit.

Lowest Flow	Secondary Fisheries Score
< 10 cfs	210
10 to 100 cfs	30
> 100 cfs, coastal tidal waters, oceans, or Great Lakes	12

T =

(300 or 0)	
300	
(210,30,12 or 0)	(210,30,12, or 0)
—	
(300,210,30,12 or 0)	(210,30,12 or 0)
300	

(9)

(5)

# DRAFT

NOV 06 1990

Site Name: *Laclede Coal Gas*

Date: *1-14-91*

15

## SURFACE WATER PATHWAY (continued) ENVIRONMENTAL THREAT SCORESHEET

### LIKELIHOOD OF RELEASE

Enter the Surface Water Likelihood of Release score from page 12.

LR =

A	B
Suspected Release	No Suspected Release
(550)	(500, 400, 300 or 100)
<i>550</i>	

References

### ENVIRONMENTAL THREAT TARGETS

11. Determine the water body types and flows (if applicable) for all surface water sensitive environments within the 15-mile target distance limit (see PA Tables 4 and 5). If there are no sensitive environments within the 15-mile target distance limit, assign a Targets score of 0 at the bottom of this page, and proceed to page 17.

Environment Name	Water Body Type	Flow
		cfs
		cfs
		cfs
		cfs
		cfs

12. PRIMARY SENSITIVE ENVIRONMENTS: If you suspect any sensitive environment listed above has been exposed to hazardous substances from the site (see Surface Water Criteria List, page 11), assign a score of 300 and do not evaluate Factor 13. List the Primary Sensitive Environments:

\_\_\_\_\_  
\_\_\_\_\_

13. SECONDARY SENSITIVE ENVIRONMENTS:

- A. For Secondary Sensitive Environments on surface water bodies with flows of 100 cfs or less, assign scores as follows, and do not evaluate part B of this factor:

Flow	Dilution Weight (PA Table 4)	Environment Type and Value (PA Tables 5 and 6)	Total
<i>147,000</i> cfs	<i>N/A</i>	<i>x</i> <i>W-Hard</i>	<i>= 0</i>
cfs		<i>x</i>	<i>=</i>
cfs		<i>x</i>	<i>=</i>
cfs		<i>x</i>	<i>=</i>
cfs		<i>x</i>	<i>=</i>

*Go to B*

Sum =

- B. If NO Secondary Sensitive Environments are located on surface water bodies with flows of 100 cfs or less, assign a score of 10.

T =

(300 or 0)	
(10 or 0)	(10 or 0)
<i>10</i>	
<i>10</i>	

*(5) (9)*

# DRAFT

NOV 06 1990

Site Name:

Laclede Coal Gas 17

Date:

1-14-91

## SURFACE WATER PATHWAY (concluded) WASTE CHARACTERISTICS, THREAT, AND PATHWAY SCORE SUMMARY

WASTE CHARACTERISTICS	A	B
	Suspected Release (100 or 32)	No Suspected Release (100, 32, or 18)
14. A. If you have identified ANY Primary Targets for surface water (pages 12, 14, or 15), assign the waste characteristics score calculated on page 4, or a score of 32, whichever is GREATER; do not evaluate part B of this factor.	32	
B. If you have NOT identified any Primary Targets for surface water, assign the waste characteristics score calculated on page 4.		
WC =	32	

### SURFACE WATER PATHWAY THREAT SCORES

Threat	Likelihood of Release (LR) Score (from page 12)	Targets (T) Score	Pathway Waste Characteristics (WC) Score (determined above)	Threat Score $LR \times T \times WC$ / 82,500
Drinking Water	550	3,000,055	32	<small>(subject to a maximum of 100)</small> 100
Human Food Chain	550	300	32	<small>(subject to a maximum of 100)</small> 64
Environmental	550	10	32	<small>(subject to a maximum of 60)</small> 2

**SURFACE WATER PATHWAY SCORE**  
(Drinking Water Threat + Human Food Chain Threat + Environmental Threat)

(subject to a maximum of 100)

100



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NOV 03 1990

Site Name: Laclede Coal Corp 19  
Date: 1-14-91

SOIL EXPOSURE PATHWAY SCORESHEET

Pathway Characteristics	
Do any people live on or within 200 ft of areas of suspected contamination?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Do any people attend school or day care on or within 200 ft of areas of suspected contamination?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is the facility active? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, estimate the number of workers: _____	

LIKELIHOOD OF EXPOSURE

1. SUSPECTED CONTAMINATION: Surficial contamination is assumed.  
A score of 550 is assigned.

LE =

A	B
Suspected Contamination	No Suspected Contamination
(550)	
550	

References

RESIDENT POPULATION THREAT TARGETS

2. RESIDENT POPULATION: Determine the number of people occupying residences or attending school or day care on or within 200 feet of areas of suspected contamination (see Soil Exposure Pathway Criteria List, page 18).

\_\_\_\_\_ people x 10 =

3. RESIDENT INDIVIDUAL: If you have identified any Resident Population (Factor 2), assign a score of 50; otherwise, assign a score of 0.

4. WORKERS: Assign a score from the following table based on the total number of workers at the facility and nearby facilities with suspected contamination:

Number of Workers	Score
0	0
1 to 100	5
101 to 1,000	10
> 1,000	15

~ 11 workers

5. TERRESTRIAL SENSITIVE ENVIRONMENTS: Assign a value from PA Table 7 for each terrestrial sensitive environment that is located on an area of suspected contamination:

None

Terrestrial Sensitive Environment Type	Value
_____	_____
_____	_____
_____	_____

Sum =

6. RESOURCES: A score of 5 is assigned.

T =

WASTE CHARACTERISTICS

7. Assign the waste characteristics score calculated on page 4.

WC =

(100, 32, or 18)	
18	

RESIDENT POPULATION THREAT SCORE:

$$\frac{LE \times T \times WC}{82,500}$$

NEARBY POPULATION THREAT SCORE:

Assign a score of 2

SOIL EXPOSURE PATHWAY SCORE:

Resident Population Threat + Nearby Population Threat

(subject to a maximum of 100)
1

2
---

(subject to a maximum of 100)
3

# DRAFT

NOV 08 1990

Site Name: *Laclede Coal Gas* 22

Date: *1-14-91*

## AIR PATHWAY SCORESHEET

### Pathway Characteristics

Do you suspect a release (see Air Pathway Criteria List, page 21)?

Yes ☐ No ☒

Distance to the nearest individual:

*> 0.4 mile*

ft

### LIKELIHOOD OF RELEASE

1. SUSPECTED RELEASE: If you suspect a release to air (see page 21), assign a score of 550, and use only column A for this pathway.
2. NO SUSPECTED RELEASE: If you do not suspect a release to air, assign a score of 500, and use only column B for this pathway.

A	B
Suspected Release	No Suspected Release
(550)	(500)
	500
LR =	500

References

(1)(2)

### TARGETS

3. PRIMARY TARGET POPULATION: Determine the number of people subject to exposure from a release of hazardous substances through the air (see Air Pathway Criteria List, page 21).  $\text{people} \times 10 =$
4. SECONDARY TARGET POPULATION: Determine the number of people within the 4-mile target distance limit, and assign the total population score from PA Table 8.
5. NEAREST INDIVIDUAL: If you have identified any Primary Targets for the air pathway, assign a score of 50; otherwise, assign the highest Nearest Individual score from PA Table 8.
6. PRIMARY SENSITIVE ENVIRONMENTS: Sum the sensitive environment values (PA Table 5) and wetland acreage values (PA Table 9) for environments subject to exposure from air hazardous substances (see Air Pathway Criteria List, page 21).

Sensitive Environment Type	Value

Sum =

7. SECONDARY SENSITIVE ENVIRONMENTS: Use PA Table 10 to determine the score for secondary sensitive environments. *> 1/2 mile*

8. RESOURCES: A score of 5 is assigned.

	61
(50, 20, 7, 2, 1, or 0)	(20, 7, 2, 1, or 0)
	20
(5)	(5)
5	5
T =	86

(8)

(10)

(7)

### WASTE CHARACTERISTICS

9. A. If you have identified any Primary Targets for the air pathway, assign the waste characteristics score calculated on page 4, or a score of 32, whichever is GREATER; do not evaluate part B of this factor.
- B. If you have NOT identified any Primary Targets for the air pathway, assign the waste characteristics score calculated on page 4.

(100 or 32)	
(100, 32, or 18)	(100, 32, or 18)
	18
WC =	18

AIR PATHWAY SCORE:

LR x T x WC

82,500

(subject to a maximum of 100)

9

## SITE SCORE CALCULATION

	S	S <sup>2</sup>
GROUND WATER PATHWAY SCORE (S <sub>gw</sub> ):	1	1
SURFACE WATER PATHWAY SCORE (S <sub>sw</sub> ):	100	10,000
SOIL EXPOSURE PATHWAY SCORE (S <sub>se</sub> ):	3	9
AIR PATHWAY SCORE (S <sub>a</sub> ):	9	81
SITE SCORE:	$\sqrt{\frac{S_{gw}^2 + S_{sw}^2 + S_{se}^2 + S_a^2}{4}} = 50$	

## RECOMMENDATION

## SUMMARY

	YES	NO
1. Is there a high possibility of a threat to nearby drinking water wells by migration of hazardous substances in ground water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
A. If yes, identify the wells recommended for sampling during the SI.		
B. If yes, how many people are served by these threatened wells? _____		
2. Are any of the following suspected to have been exposed to hazardous substances through surface water migration from the site?		
A. Drinking water intake	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B. Fishery	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C. Sensitive environment: wetland, critical habitat, others	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D. If yes, identify the targets recommended for sampling during the SI.		
<i>Possibly the Illinois Drinking Water Intake</i>		
<i>Mississippi River</i>		
3. Do people reside or attend school or day care on or within 200 ft of any area of suspected contamination?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Are there public health concerns at this site that are not addressed by PA scoring considerations? If yes, explain:	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## LACLEDE COAL GAS SITE

### REFERENCES

- 1). Ecology and Environment, Inc., Field Investigation Team, November 20, 1990, Site Reconnaissance of the Laclede FMGP, TDD #F-07-9008-020.
- 2). Ecology and Environment, Inc., Field Investigation Team, June 23, 1988, Preliminary Assessment of the Former Union Electric Mound Street Power Plant Site, TDD #F-07-8708-029.
- 2a). Environmental Research & Technology, Inc., and Koppers Co Inc., September 1984, Handbook on Manufactured Gas Plant Sites.
- 3). Schlosser, Wayne, December 7, 1990, Community Relations Manager, Illinois American Water Company, telephone conversation with Keith Brown, E & E/FIT.
- 4). Ellis, Brian, December 7, 1990, Lieutenant, U.S. Coast Guard, telephone conversation with Keith Brown, E & E/FIT.
- 5). Nichols, Nick, August 31, 1990, Department Manager, City of St. Louis, Port Authority, telephone conversation with Keith Brown, E & E/FIT.
- 6). Lewis, Randal, January 11, 1991, Terminal Manager, Petroleum Fuel & Terminal Co., telephone conversation with Keith Brown, E & E/FIT.
- 7). Dickneite, Dan, Missouri Department of Conservation, January 8, 1991, letter to Keith Brown, E & E/FIT.
- 8). U.S. Environmental Protection Agency, March 1989, Graphical Exposure Modeling System, Washington D.C.
- 9). Rapp, Jerry, December 7, 1990, Engineer, U.S. Corp of Engineers, telephone conversation with Keith Brown, E & E/FIT.
- 10). U.S. Geological Survey, 1968 revised, 7.5 Minute Series Topographic Map, Granite City Quadrangle, Missouri, Washington D.C.



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International Specialists in the Environment

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Superfund

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## MEMORANDUM

CONFIDENTIAL

TO: Pete Culver, RPO  
THRU: Sharon Martin, FITOM  
FROM: E & E/FIT  
DATE: October 29, 1991

Site: Laclede Coal Gas  
ID #: MOD981715980  
Break: 1.8  
Other: 10-29-91

RECEIVED

OCT 31 1991

SAFE SECTION

SUBJECT: HRS Considerations and Recommendations for the Laclede Coal Gas Plant Site, located in St. Louis, Missouri.  
TDD #F-07-9008-020 PAN #FM00579SA  
Site #Y33 Project #002  
Superfund Contact: Greg Reesor  
Project Manager: Keith A. Brown

The Region VII U.S. Environmental Protection Agency (EPA) tasked the Ecology and Environment, Inc.. Field Investigation Team (E & E/FIT) to conduct a Screening Site Inspection (SSI) of the former Laclede Coal Gas Plant site in St. Louis, Missouri. The purpose of the SSI is to determine if a potential environmental hazard is posed by tar and purifier wastes which may have been buried on site.

The site was first investigated by E & E/FIT under the Mound Street Power Plant Preliminary Assessment (PA) TDD #F-07-8708-029, completed on September 17, 1987. The Mound Street Power Plant PA was prompted by reports of oil accumulation in the facility and occasional oil releases to the Mississippi River.

During the PA for the former Mound Street Power Plant site, the E & E/FIT collected six liquid samples from the basement of the facility and two samples from two different manholes adjacent to the facility. All samples were screened for PCBs at a 1 ppm detection limit by the E & E/FIT Field Analytical Support Program (FASP). No PCB contaminants were identified by the Tracor gas chromatograph.

Sampling data from the SSI revealed cyanide and PAHs as the major on-site contaminants. Cyanide contamination was found throughout the site in the 0 to 2 foot deep soil samples. Deeper soil samples revealed cyanide contamination at depths at least as great as 11 feet. PAH contamination, both in shallow and deep soil samples, was restricted to small areas within the site. The greatest area of PAH contamination was found within the bermed tank farm. Only one ground water sample showed PAH contamination. However, the concentrations are far less extensive than the soil concentrations. Surface water samples showed undetected levels of PAH or cyanide contamination. Sediment samples revealed low levels of PAH contamination.

## **HRS CONSIDERATIONS**

Prior to the SSI, a Hazardous Ranking System (HRS) PA Methodology score of 50 was calculated for the site. This score represented a worst case scenario. After completion of the SSI, a new PA methodology score of 27 was calculated for the site. Sample analyses indicated that the only primary target population for the site is now a potential target population. Thus, the drop in score. The ground water, soil, and air pathways scored slightly higher after the SSI on the PA Methodology Score Sheets. Their scores are 3, 9, and 52, respectively. The higher scores are due to the increase in the waste characteristic score, which was calculated after the SSI was completed. Previously, the waste characteristic score was 18, but this had been calculated incorrectly. The correct waste characteristic score is 100. Thus, the ground water, soil, and air pathways scored higher. The surface water pathway score, however, dropped from the maximum score of 100 to only 11. The score of 100 was calculated with the assumption of a suspected release. A primary target population of approximately 300,000 people produced a drinking water threat score of 3,000,000. However, surface water samples indicated that there is currently no significant contaminants being released from the site into the surface water. Thus, the primary target population is now a secondary target population under the no suspected release criteria. This dropped the drinking water threat score down to 7.

## **RECOMMENDATIONS**

E & E/FIT recommends that the Corps of Engineers piezometer wells, which are located between the site and the Mississippi River, be sampled on an annual basis to determine if contaminants are migrating in the ground water. There is the potential for a ground water to surface water release because of the close proximity of the Mississippi River. No other work needs to be performed at the current time, due to the fact that no other pathway targets exist near the site, except for the surface water pathway potential drinking water threat target. If more significant contamination is detected in the piezometer wells, then additional monitoring well installation is recommended.

Attachments: PA Methodology Score Sheets  
HRS References

# DRAFT

NOV 06 1990

Site Name: Laclede Coal Gas  
Date: Oct. 10, 1991

8

## GROUND WATER PATHWAY SCORESHEET

Pathway Characteristics	
Do you suspect a release (see Ground Water Pathway Criteria List, page 7)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is the site located in karst terrain?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Depth to aquifer:	<u>approx 30 ft</u>
Distance to the nearest drinking-water well:	<u>7 4 m.</u>

### LIKELIHOOD OF RELEASE

	A Suspected Release	B No Suspected Release	References
1. SUSPECTED RELEASE: If you suspect a release to ground water (see page 7), assign a score of 550, and use only column A for this pathway.	(550) 550		(1)(2)(4)
2. NO SUSPECTED RELEASE: If you do not suspect a release to ground water, and the site is in karst terrain or the depth to aquifer is 70 feet or less, assign a score of 500; otherwise, assign a score of 340. Use only column B for this pathway.		(500 = 340)	
LR =	550		

### TARGETS

3. PRIMARY TARGET POPULATION: Determine the number of people served by drinking water from wells that you suspect have been exposed to hazardous substances from the site (see Ground Water Pathway Criteria List, page 7). _____ people x 10 =	—		(2)(5)
4. SECONDARY TARGET POPULATION: Determine the number of people served by drinking water from wells that you do NOT suspect have been exposed to hazardous substances from the site, and assign the total population score from PA Table 2. Are any wells part of a blended system? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, attach a page to show apportionment calculations.	—		(2)(5)
5. NEAREST WELL: If you have identified any Primary Targets for ground water, assign a score of 50; otherwise, assign the highest Nearest Well score from PA Table 2. If no drinking-water wells exist within 4 miles, assign a score of zero.	(50, 20, 10, 0, 5, 3, 2, = 0)	(20, 10, 0, 5, 3, 2, = 0)	(2)(5)
6. WELLHEAD PROTECTION AREA (WHPA): Assign a score of 20 if any portion of a designated WHPA is within 1/4 mile of the site; assign 5 if from 1/4 to 4 miles.	(20, 5, = 0)	(20, 5, = 0)	
7. RESOURCES: A score of 5 is assigned.	(5) 5	(5) 5	
T =	5		

### WASTE CHARACTERISTICS

8. A. If you have identified any Primary Targets for ground water, assign the waste characteristics score calculated on page 4, or a score of 32, whichever is GREATER; do not evaluate part B of this factor.	(100 = 32)	
B. If you have NOT identified any Primary Targets for ground water, assign the waste characteristics score calculated on page 4.	(100, 32, or 10)	(100, 32, or 10)
WC =	100	

GROUND WATER PATHWAY SCORE:

$$\frac{LR \times T \times WC}{82,500}$$

[Subject to a maximum of 100]

3

# DRAFT

NOV 06 1990

Site Name: Lockett Coal Gas 12  
Date: Oct. 10, 1991

## SURFACE WATER PATHWAY LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT SCORESHEET

Pathway Characteristics	
Do you suspect a release (see Surface Water Pathway Criteria List, page 11)?	Yes _____ No <input checked="" type="checkbox"/>
Distance to surface water:	<u>100</u> ft
Flood Frequency:	<u>500</u> yrs
What is the downstream distance to the nearest drinking-water intake?	<u>2 1/4</u> miles
nearest fishery? <u>1</u> miles	nearest sensitive environment? <u>10</u> miles

### LIKELIHOOD OF RELEASE

- SUSPECTED RELEASE:** If you suspect a release to surface water (see page 11), assign a score of 550, and use only column A for this pathway.
- NO SUSPECTED RELEASE:** If you do not suspect a release to surface water, and the distance to surface water is 2,500 feet or less, assign a score of 500; otherwise, assign a score from the table below. Use only column B for this pathway.

Floodplain	Score
Site in annual or 10-yr floodplain	500
Site in 100-yr floodplain	400
Site in 500-yr floodplain	300
Site outside 500-yr floodplain	100

A Suspected Release	B No Suspected Release
550	500
550	500

References

(3)

LR =

### DRINKING WATER THREAT TARGETS

- Determine the water body types, flows (if applicable), and number of people served by all drinking-water intakes within the 15-mile target distance limit. If there are no drinking-water intakes within the target distance limit, assign a total Targets score of 5 at the bottom of this page (Resources only) and proceed to page 14.

Intake Name	Water Body Type	Flow	People Served
<u>St. American Water Co. River</u>	<u>River</u>	<u>140,000 cfs</u>	<u>300,000</u>
_____	_____	_____ cfs	_____
_____	_____	_____ cfs	_____

- PRIMARY TARGET POPULATION:** If you suspect any drinking-water intake listed above has been exposed to hazardous substances from the site (see Surface Water Pathway Criteria List, page 11), list the intake name(s) and calculate the factor score based on the number of people served.

\_\_\_\_\_ people x 10 = \_\_\_\_\_

- SECONDARY TARGET POPULATION:** Determine the Secondary Target Population score from PA Table 3 based on the populations using drinking-water from intakes that you do NOT suspect have been exposed to hazardous substances from the site.

Are any intakes part of a blended system? Yes \_\_\_\_\_ No ☒  
If yes, attach a page to show apportionment calculations.

- NEAREST INTAKE:** If you have identified any Primary Targets for the drinking water threat (Factor 4), assign a score of 50; otherwise, assign the Nearest Intake score from PA Table 3. If no drinking-water intake exists within the 15-mile target distance limit, assign a score of zero.

- RESOURCES:** A score of 5 is assigned.

	2
	0
5	5
	7

(5)(6)

(5)(6)

(6)

T =



Site Name:  
Date:

PA TABLE 3: VALUES FOR SECONDARY SURFACE WATER TARGET POPULATIONS

Surface Water Body Flow Characteristics (see PA Table 4)	Population	Nearest Intake (choose highest)	Population Served by Intakes Within Flow Category											Population Value
			1 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,001 to 3,000,000	
< 10 cfs	_____	20	2	5	18	52	163	521	1,633	5,214	16,325	52,136	163,246	_____
10 to 100 cfs	_____	2	1	1	2	5	16	52	163	521	1,633	5,214	16,325	_____
> 100 to 1,000 cfs	_____	1	0	0	1	1	2	5	16	52	163	521	1,633	_____
> 1,000 to 10,000 cfs	_____	0	0	0	0	0	1	1	2	5	16	52	163	_____
> 10,000 cfs or Great Lakes	300,000	0	0	0	0	0	0	0	1	1	2	5	16	2
3-mile Mixing Zone	_____	10	1	3	8	26	82	261	816	2,607	8,162	26,068	81,663	_____
Nearest Intake =		0												Score = 2

PA TABLE 4: SURFACE WATER TYPE / FLOW CHARACTERISTICS WITH DILUTION WEIGHTS FOR SECONDARY SURFACE WATER SENSITIVE ENVIRONMENTS

Type of Surface Water Body		Dilution Weight
Water Body Type	OR Flow Characteristics	
minimal stream	flow less than 10 cfs	1
small to moderate stream	flow 10 to 100 cfs	0.1
moderate to large stream	flow greater than 100 to 1,000 cfs	N/A
large stream to river	flow greater than 1,000 to 10,000 cfs	N/A
large river	flow greater than 10,000 cfs	N/A
3-mile mixing zone of quiet flowing streams or rivers	flow 10 cfs or greater	N/A
coastal tidal water (harbors, sounds, bays, etc.), ocean, or Great Lakes	N/A	N/A

# DRAFT

NOV 06 1990

Site Name: Laclede Coal Gas  
Date: Oct. 10, 1991

14

## SURFACE WATER PATHWAY (continued) HUMAN FOOD CHAIN THREAT SCORESHEET

### LIKELIHOOD OF RELEASE

Enter the Surface Water Likelihood of Release score from page 12.

LR =

A	B
Suspected Release	No Suspected Release
(550)	(500, 400, 300 = 100)
	500

References

### HUMAN FOOD CHAIN THREAT TARGETS

8. Determine the water body types and flows (if applicable) for all fisheries within the 15-mile target distance limit. If there are no fisheries within the target distance limit, assign a Targets score of 0 at the bottom of this page and proceed to page 15.

Fishery Name	Water Body Type	Flow
<u>Mississippi River</u>	<u>River</u>	<u>147,000 cfs</u>
		cfs
		cfs
		cfs
		cfs

9. PRIMARY FISHERIES: If you suspect any fishery listed above has been exposed to hazardous substances from the site (see Surface Water Criteria List, page 11), assign a score of 300 and do not evaluate Factor 10. List the Primary Fisheries:

\_\_\_\_\_, \_\_\_\_\_  
\_\_\_\_\_, \_\_\_\_\_

10. SECONDARY FISHERIES: If you have not identified any Primary Fisheries, assign a Secondary Fisheries score from the table below using the LOWEST flow at any fishery within the 15-mile target distance limit.

Lowest Flow	Secondary Fisheries Score
< 10 cfs	210
10 to 100 cfs	30
> 100 cfs, coastal tidal waters, oceans, or Great Lakes	12

T =

(300 = 0)	
(210, 30, 12 = 0)	(210, 30, 12 = 0)
	12
(300, 210, 30, 12 = 0)	(210, 30, 12 = 0)
	12

(11)(6)

(6)

# DRAFT

NOV 06 1990

Site Name: Laclede Coal Gas  
Date: Oct 10, 1991

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## SURFACE WATER PATHWAY (continued) ENVIRONMENTAL THREAT SCORESHEET

### LIKELIHOOD OF RELEASE

Enter the Surface Water Likelihood of Release score from page 12.

LR =

A	B
Suspected Release	No Suspected Release
(550)	(500, 400, 300 or 100)
	500

References

### ENVIRONMENTAL THREAT TARGETS

11. Determine the water body types and flows (if applicable) for all surface water sensitive environments within the 15-mile target distance limit (see PA Tables 4 and 5). If there are no sensitive environments within the 15-mile target distance limit, assign a Targets score of 0 at the bottom of this page, and proceed to page 17.

Environment Name	Water Body Type	Flow
		cfs
		cfs
		cfs
		cfs
		cfs

12. PRIMARY SENSITIVE ENVIRONMENTS: If you suspect any sensitive environment listed above has been exposed to hazardous substances from the site (see Surface Water Criteria List, page 11), assign a score of 300 and do not evaluate Factor 13. List the Primary Sensitive Environments:

\_\_\_\_\_, \_\_\_\_\_  
\_\_\_\_\_, \_\_\_\_\_

13. SECONDARY SENSITIVE ENVIRONMENTS:

- A. For Secondary Sensitive Environments on surface water bodies with flows of 100 cfs or less, assign scores as follows, and do not evaluate part B of this factor:

Flow	Dilution Weight (PA Table 4)	Environment Type and Value (PA Tables 5 and 6)	Total
cfs	x	=	
cfs	x	=	
cfs	x	=	
cfs	x	=	
cfs	x	=	

Sum =

- B. If NO Secondary Sensitive Environments are located on surface water bodies with flows of 100 cfs or less, assign a score of 10.

T =

(300 or 0)	
(10 or 0)	(10 or 0)
	0
	0

(7) (11)

# DRAFT

NOV 06 1990

Site Name: *Laclede Coal Gas* 17  
Date: *Oct. 10, 1991*

## SURFACE WATER PATHWAY (concluded) WASTE CHARACTERISTICS, THREAT, AND PATHWAY SCORE SUMMARY

WASTE CHARACTERISTICS	A	B
	<i>Suspected Release</i>	<i>No Suspected Release</i>
14. A. If you have identified ANY Primary Targets for surface water (pages 12, 14, or 15), assign the waste characteristics score calculated on page 4, or a score of 32, whichever is GREATER; do not evaluate part B of this factor.	(100 ÷ 32)	
	(100 ÷ 32 = 18)	(100 ÷ 32 = 18)
B. If you have NOT identified any Primary Targets for surface water, assign the waste characteristics score calculated on page 4.		100
WC =		100

### SURFACE WATER PATHWAY THREAT SCORES

Threat	<i>Likelihood of Release (LR) Score (from page 12)</i>	<i>Targets (T) Score</i>	<i>Pathway Waste Characteristics (WC) Score (determined above)</i>	<i>Threat Score LR x T x WC / 82,500</i>
Drinking Water	500	7	100	(subject to a maximum of 100) 4
Human Food Chain	500	12	100	(subject to a maximum of 100) 7
Environmental	500	0	100	(subject to a maximum of 100) 0

**SURFACE WATER PATHWAY SCORE**  
(Drinking Water Threat + Human Food Chain Threat + Environmental Threat)

(subject to a maximum of 100)  
11

# DRAFT

NOV 03 1990

Site Name: *Laclede Coal Gas*  
Date: *Oct. 10, 1991*

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## SOIL EXPOSURE PATHWAY SCORESHEET

Pathway Characteristics	
Do any people live on or within 200 ft of areas of suspected contamination?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Do any people attend school or day care on or within 200 ft of areas of suspected contamination?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is the facility active? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, estimate the number of workers: <i>11</i>	

### LIKELIHOOD OF EXPOSURE

		A Suspected Contamination (550)	B No Suspected Contamination	References
1. SUSPECTED CONTAMINATION: Surficial contamination is assumed. A score of 550 is assigned.	LE =	550		

### RESIDENT POPULATION THREAT TARGETS

2. RESIDENT POPULATION: Determine the number of people occupying residences or attending school or day care on or within 200 feet of areas of suspected contamination (see Soil Exposure Pathway Criteria List, page 18).  _____ people x 10 =			(1)(12)										
3. RESIDENT INDIVIDUAL: If you have identified any Resident Population (Factor 2), assign a score of 50; otherwise, assign a score of 0.			(1)(12)										
4. WORKERS: Assign a score from the following table based on the total number of workers at the facility and nearby facilities with suspected contamination: <table border="1"><thead><tr><th>Number of Workers</th><th>Score</th></tr></thead><tbody><tr><td>0</td><td>0</td></tr><tr><td>1 to 100</td><td>5</td></tr><tr><td>101 to 1,000</td><td>10</td></tr><tr><td>&gt; 1,000</td><td>15</td></tr></tbody></table>	Number of Workers	Score	0	0	1 to 100	5	101 to 1,000	10	> 1,000	15			(8)
Number of Workers	Score												
0	0												
1 to 100	5												
101 to 1,000	10												
> 1,000	15												
5. TERRESTRIAL SENSITIVE ENVIRONMENTS: Assign a value from PA Table 7 for each terrestrial sensitive environment that is located on an area of suspected contamination: <table border="1"><thead><tr><th>Terrestrial Sensitive Environment Type</th><th>Value</th></tr></thead><tbody><tr><td><i>None</i></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></tbody></table>	Terrestrial Sensitive Environment Type	Value	<i>None</i>								(9)		
Terrestrial Sensitive Environment Type	Value												
<i>None</i>													
6. RESOURCES: A score of 5 is assigned.	Sum =												
	T =												

### WASTE CHARACTERISTICS

7. Assign the waste characteristics score calculated on page 4.	WC =	
---	------	--

### RESIDENT POPULATION THREAT SCORE:

$$\frac{LE \times T \times WC}{82,500}$$

### NEARBY POPULATION THREAT SCORE:

Assign a score of 2

### SOIL EXPOSURE PATHWAY SCORE:

Resident Population Threat + Nearby Population Threat

# DRAFT

NOV 06 1990

Site Name: *Laclede Coal Gas*  
Date: *Oct. 10, 1991*

22

## AIR PATHWAY SCORESHEET

Pathway Characteristics	
Do you suspect a release (see Air Pathway Criteria List, page 21)?	Yes _____ No <input checked="" type="checkbox"/>
Distance to the nearest individual:	<i>70 to 1/4 mile</i> _____ ft

### LIKELIHOOD OF RELEASE

	A Suspected Release (550)	B No Suspected Release (500)	References
1. SUSPECTED RELEASE: If you suspect a release to air (see page 21), assign a score of 550, and use only column A for this pathway.			
2. NO SUSPECTED RELEASE: If you do not suspect a release to air, assign a score of 500, and use only column B for this pathway.		500	(1)(2)
LR =		500	

### TARGETS

3. PRIMARY TARGET POPULATION: Determine the number of people subject to exposure from a release of hazardous substances through the air (see Air Pathway Criteria List, page 21). _____ people x 10 =											
4. SECONDARY TARGET POPULATION: Determine the number of people within the 4-mile target distance limit, and assign the total population score from PA Table 8.		61	(10)								
5. NEAREST INDIVIDUAL: If you have identified any Primary Targets for the air pathway, assign a score of 50; otherwise, assign the highest Nearest Individual score from PA Table 8.	(50, 20, 7, 2, 1, or 0)	20	(12)								
6. PRIMARY SENSITIVE ENVIRONMENTS: Sum the sensitive environment values (PA Table 5) and wetland acreage values (PA Table 9) for environments subject to exposure from air hazardous substances (see Air Pathway Criteria List, page 21).											
<table><tr><th>Sensitive Environment Type</th><th>Value</th></tr><tr><td>_____</td><td>_____</td></tr><tr><td>_____</td><td>_____</td></tr><tr><td>_____</td><td>_____</td></tr></table>	Sensitive Environment Type	Value	_____	_____	_____	_____	_____	_____			
Sensitive Environment Type	Value										
_____	_____										
_____	_____										
_____	_____										
Sum =											
7. SECONDARY SENSITIVE ENVIRONMENTS: Use PA Table 10 to determine the score for secondary sensitive environments. 7 1/2 mile		-	(9)								
8. RESOURCES: A score of 5 is assigned.	(5) 5	(5) 5									
T =		86									

### WASTE CHARACTERISTICS

9. A. If you have identified any Primary Targets for the air pathway, assign the waste characteristics score calculated on page 4, or a score of 32, whichever is GREATER; do not evaluate part B of this factor.	(100 or 32)	
B. If you have NOT identified any Primary Targets for the air pathway, assign the waste characteristics score calculated on page 4.	(100, 32, or 18)	100
WC =		100

AIR PATHWAY SCORE:

LR x T x WC  
82,500

(subject to a maximum of 100)

52

Site Name:  
Date:

PA TABLE 8: VALUES FOR SECONDARY AIR TARGET POPULATIONS

Distance from Site	Population	Nearest Individual (choose highest)	Population Within Distance Category												Population Value
			1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,001 to 3,000,000	
Onsite	_____	20	1	2	5	16	52	163	521	1,633	5,214	16,325	52,136	163,246	_____
> 0 to ¼ mile	<u>24</u>	<u>20</u>	1	1	1	4	13	41	130	408	1,303	4,081	13,034	40,811	<u>1</u>
> ¼ to ½ mile	<u>1720</u>	2	0	0	1	1	3	9	28	88	282	882	2,815	8,815	<u>9</u>
> ½ to 1 mile	<u>4842</u>	1	0	0	0	1	1	3	8	26	83	261	834	2,612	<u>8</u>
> 1 to 2 miles	<u>25978</u>	0	0	0	0	0	1	1	3	8	27	83	266	833	<u>8</u>
> 2 to 3 miles	<u>68360</u>	0	0	0	0	0	1	1	1	4	12	38	120	376	<u>12</u>
> 3 to 4 miles	<u>106178</u>	0	0	0	0	0	0	1	1	2	7	23	73	229	<u>23</u>
Nearest Individual = <u>20</u>			Score = <u>61</u>												

DRAFT NOV 06 1990

PA TABLE 9: AIR PATHWAY VALUES FOR WETLAND AREA

Wetland Area	Assigned Value
Less than 1 acre	0
1 to 50 acres	25
Greater than 50 to 100 acres	75
Greater than 100 to 150 acres	125
Greater than 150 to 200 acres	175
Greater than 200 to 300 acres	250
Greater than 300 to 400 acres	350
Greater than 400 to 500 acres	450
Greater than 500 acres	500

PA TABLE 10: DISTANCE WEIGHTS AND CALCULATIONS FOR AIR PATHWAY SECONDARY SENSITIVE ENVIRONMENTS

<i>Distance</i>	<i>Distance Weight</i>	<i>Sensitive Environment Type and Value (from PA Table 5 or 9)</i>	<i>Product</i>
Onsite	0.10	x	
		x	
0-1/4 mi	0.025	x	
		x	
		x	
1/4-1/2mi	0.0054	x	
		x	
		x	
		x	
Total Environments Score =			

**DRAFT** NOV 06 1990

Site Name: *Lactide Cool Gas* 24  
Date: *Oct. 10, 1991*

**SITE SCORE CALCULATION**

	S	S <sup>2</sup>
GROUND WATER PATHWAY SCORE (S <sub>gw</sub> ):	3	9
SURFACE WATER PATHWAY SCORE (S <sub>sw</sub> ):	11	121
SOIL EXPOSURE PATHWAY SCORE (S <sub>so</sub> ):	9	81
AIR PATHWAY SCORE (S <sub>a</sub> ):	52	2704
SITE SCORE: $\sqrt{\frac{S_{gw}^2 + S_{sw}^2 + S_{so}^2 + S_a^2}{4}} =$		27

**RECOMMENDATION**

**SUMMARY**

	YES	NO
1. Is there a high possibility of a threat to nearby drinking water wells by migration of hazardous substances in ground water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
A. If yes, identify the wells recommended for sampling during the SI.		
B. If yes, how many people are served by these threatened wells? _____		
2. Are any of the following suspected to have been exposed to hazardous substances through surface water migration from the site?		
A. Drinking water intake	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B. Fishery	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C. Sensitive environment: wetland, critical habitat, others	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D. If yes, identify the targets recommended for sampling during the SI.		
3. Do people reside or attend school or day care on or within 200 ft of any area of suspected contamination?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Are there public health concerns at this site that are not addressed by PA scoring considerations? If yes, explain:	<input type="checkbox"/>	<input checked="" type="checkbox"/>



References  
Laclede Coal Gas Site

1. Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), November 20, 1990, Site Reconnaissance of the Laclede FMGP, TDD #F-07-9008-020.
2. Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), June 23, 1988, Preliminary Assessment of the Former Union Electric Mound Street Power Plant Site, TDD #F-07-8708-029.
3. Ecology and Environment, Inc., Field Investigation Team (E & E/FIT), October 1991, SSI Final Report of the Laclede Coal Gas Site, TDD #F-07-9008-020.
4. Environmental Research & Technology, Inc., and Koppers Co. Inc., September 1984, Handbook on Manufactured Gas Plant Sites.
5. Schlosser, Wayne, December 7, 1990, Community Relations Manager, Illinois American Water Company, telephone conversation with Keith Brown, E & E/FIT.
6. Ellis, Brian, December 7, 1990, Lieutenant, U.S. Coast Guard, telephone conversation with Keith Brown, E & E/FIT.
7. Nichols, Nick, Department Manager, City of St. Louis, Port Authority, August 31, 1990, telephone conversation with Keith Brown, E & E/FIT.
8. Lewis, Randal, Terminal Manager, Petroleum Fuel & Terminal Co., telephone conversation with Keith Brown, E & E/FIT.
9. Dickneite, Dan, Missouri Department of Conservation, January 8, 1991, letter to Keith Brown, E & E/FIT.
10. U.S. Environmental Protection Agency, March 1989, Graphical Exposure Modeling System, Washington, D.C.
11. Rapp, Jerry, Engineer, U.S. Corp of Engineers, telephone conversation with Keith Brown, E & E/FIT.
12. U.S. Geological Survey, 1968 revised, 7.5 Minute Series Topographic Map, Granite City Quadrangle, Missouri, Washington, D.C.